1. Null & Lobur, Chapter 3, #10.

2. Null & Lobur, Chapter 3, #12.

3. Null & Lobur, Chapter 3, #16. Minimize the expression such that the propagation delay of the resulting circuit is minimized.


5. Null & Lobur, Chapter 3, #32. Complete this in 3 steps giving a result for each of the following:
   a. A truth table
   b. A sum-of-products (SOP) expression
   c. A schematic from logic.ly that directly implements the SOP expression.

6. Null & Lobur, Chapter 3, #34. Give a schematic from logic.ly for this problem.

7. Null & Lobur, Chapter 3, #37. For the circuit in this problem give:
   a. An expression that directly corresponds to the circuit.
   b. A truth table expressing the function computed by the circuit.


10. Consider an 8-bit ALU with the same design as the one discussed in class. Assume that the data inputs to this ALU are A=0011 0110 and B=1011 1010. What would the outputs of this ALU be for the control line settings shown below? Be sure to indicate the value of all outputs: (R)esult, (N)egative, (Z)ero and (O)dd.
    
    a. \[\begin{array}{cccc} C3 & C2 & C1 & C0 \\ 0 & 1 & 0 & 1 \end{array}\]
    
    b. \[\begin{array}{cccc} C3 & C2 & C1 & C0 \\ 1 & 0 & 1 & 1 \end{array}\]
    
    c. \[\begin{array}{cccc} C3 & C2 & C1 & C0 \\ 1 & 1 & 1 & 1 \end{array}\]

11. At first glance it does not appear that the ALU that we designed in class can perform subtraction. However, more careful consideration reveals that it can. Explain how this ALU can perform subtraction.